

ABSTRACT

The present invention relates to novel nucleic acids encoding canine and feline melanocortin 4 receptors and their gene products. Furthermore, the present invention relates to screening assays to identify compounds that modulate the activity or expression of the melanocortin 4 receptors of the invention. In addition, the present invention relates to methods and therapeutic compositions for the treatment of appetite-related, metabolic and reproductive disorders related to inadequate food intake and energy metabolism, comprising administering to animals compounds that modulate the activity or expression of melanocortin receptors. In one aspect, the invention relates to methods and compositions that antagonize the activity or expression of melanocortin 4 receptors in order to enhance the appetite of diseased, stressed or injured companion animals, livestock or poultry comprising administering compounds that antagonize the activity or expression of the novel melanocortin 4 receptors of the present invention. In another aspect, the invention relates to methods and compositions that agonize the activity or expression of melanocortin 4 receptors in order to treat, *e.g.*, obesity of companion animals, such as cats and dogs comprising administering compounds that agonize the activity or expression of the novel melanocortin 4 receptors of the present invention.